A STUDY OF THE RESOURCES-FOR-INFRASTRUCTURE AGREEMENTS IN OIL-RICH MARKETS

Maria Oluyeju [*], Olufemi Oluyeju [**]

[*] *Corresponding author*, Webber Wentzel Attorneys, Johannesburg, South Africa
Contact details: Webber Wentzel Attorneys, 90 Rivonia Rd, Johannesburg 2196, South Africa
[**] Department of Public Law, University of Venda, Limpopo, South Africa

OPEN ACCESS

How to cite this paper: Oluyeju, M., & Oluyeju, O. (2023). A study of the resources-for-infrastructure agreements in oil-rich markets [Special issue]. *Journal of Governance & Regulation, 12*(3), 312–323. https://doi.org/10.22495/jgrv12i3siart13

ISSN Online: 2306-6784
ISSN Print: 2220-9352

Received: 17.11.2022
Accepted: 12.09.2023

JEL Classification: K39
DOI: 10.22495/jgrv12i3siart13

Abstract

Infrastructure acts as a catalyst for human and economic development and is critical to the general functioning of a society. It defines a country's international competitiveness and creates jobs (Chen, 2018). However, in Sub-Saharan Africa (SSA), it is well documented that, in terms of the most common measures of infrastructure development, the region typically lags behind most developing regions (Calderon et al., 2018). Although the region is abundantly rich in natural resources, with discoveries being continuously made, the lack of infrastructure remains one of the significant obstacles to sustaining economic development in the region. Given the constraints on traditional sources of infrastructure finance, resources-for-infrastructure (R4I) deals present one of the most promising financing techniques for bridging the infrastructure gaps in SSA (Halland et al., 2014). Its potential use, however, begs the question of whether R4I deals guarantee remunerative returns by ensuring the mutuality of benefits between host nations and foreign developers. In answering this question, we used a theoretical or doctrinal approach. Although certain aspects of R4I deals as a financing mechanism are flawed, this mechanism can be leveraged to address the huge infrastructure deficit in the region. This paper thus informs policymakers on the aspects of R4I deals that need reform.

Keywords: Resources-For-Infrastructure, Infrastructure, Natural Resources, Financing Techniques, Sub-Saharan Africa

Authors' individual contribution: Conceptualization — M.O. and O.O.; Methodology — M.O. and O.O.; Validation — M.O. and O.O.; Formal Analysis — M.O. and O.O.; Investigation — M.O. and O.O.; Resources — M.O. and O.O.; Data Curation — M.O. and O.O.; Writing — Original Draft — M.O. and O.O.; Writing — Review & Editing — M.O. and O.O.; Supervision — M.O. and O.O.; Project Administration — M.O. and O.O.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

Infrastructure development is a critical driver of socioeconomic growth and development in countries, especially regarding poverty reduction (Owusu-Manu et al., 2019). Its deficit is a significant challenge, especially in developing nations (Xu et al., 2021). In addition, efficient infrastructure systems are essential for ensuring the proper functioning of societies. It is a known fact that the poverty of infrastructure is one of the main obstacles restraining Africa from fulfilling its potential for economic growth and attaining its development objectives, including poverty reduction (Nkemgha, et al., 2023). Most of the rural population, which comprises 60% of the continent's population,

typically lack access to infrastructure services like transportation, electricity, telecommunication, and sanitation (Nchofoung et al., 2022).

Although every African nation's development programme continues to prioritise infrastructure investment as an engine of economic growth, it is well documented that a substantial infrastructure-financing shortfall is impeding the development of infrastructure on the continent. It is estimated that between US$68 billion to US$108 billion in infrastructure investment must be made annually in Africa (Prinsloo, 2019). Accordingly, Africa performs the worst among the continents in almost all aspects of infrastructure performance, leading African authorities to request assistance from Chinese and Western development organisations and private investors (Asante & Helbrecht, 2019). Thus, meeting the vast infrastructure requirements is crucial to enhance economic progress and raise the standard of living for Africans. The provision of infrastructure significantly aids the advancement of humanity, the eradication of poverty, and the accomplishment of the Sustainable Development Goals (SDGs). In addition, to improving people's quality of life, adequate and effective infrastructure also promotes quick industrialisation (African Development Bank [AfDB], 2018b).

Nonetheless, a large portion of Africa's public infrastructure shortfall appears in sub-Saharan Africa (SSA), where an estimated US$93 billion in yearly finance is needed (Chigora et al., 2021). On almost every parameter of infrastructure performance, SSA ranks last among developing regions (Calderon et al., 2018). Following two decades of strong development that surpassed that of wealthier countries, economic activity in SSA has slowed. There is, therefore, an urgent need to re-establish growth momentum in the face of an external environment defined by decreased global commerce and commodity prices that may remain lower than pre-crisis levels for an extended length of time (Calderon et al., 2018).

Regrettably, countries in the region have not been able to access traditional sources of development financing, such as aid and balance of payment support from international financial institutions like The World Bank and the International Monetary Fund (IMF), due to substantial financing requirements against in the context of weakly performing states. Therefore, they have been failing to pay for their essential public infrastructure requirements (Chigora et al., 2021). For example, some of the biggest challenges holding back SSA's industrialisation are the absence of enough electricity, water, and transportation infrastructure that would allow companies to thrive in industries with sizable comparative advantages (AfDB, 2018a).

By design, however, this study specifically focuses on SSA because of the region's rich natural resources endowment, particularly Angola and Nigeria. These nations are significant in the context of this study for two reasons: first, they account for the bulk of Africa's crude oil production and exports, and second, each has signed resources-for-infrastructure (R4I) agreements with China in the last two decades. Besides, these countries' extractive industries have a tremendous opportunity for expansion over the next decade and will undoubtedly continue to be significant investment sectors. Hence, country-specific discussions in this study are limited to these two nations.

The contributions of this study are varied. First, the study will be an addition to the existing scholarly works on the subject matter of the research. Secondly, it will inform policymakers and politicians on the aspect of R4I that need reforms. Indeed, certain aspects of the R4I financing mechanism are flawed; however, it would be tantamount to throwing the baby out with the bathwater by turning a blind eye to what it brings to the table in terms of creative financing for critical infrastructure in these cash-strapped countries. Thus, it is argued by the authors that the R4I mechanism is a bit of a curate's egg, as many SSA nations have benefited from Chinese-funded infrastructure. Furthermore, if the flaws could be "suppressed" or addressed and the remedies advanced, they could be leveraged to deal with the massive infrastructure deficit in the region.

Nevertheless, governments and developers should ensure that international standards are followed to guarantee successful development outcomes, particularly regarding environmental and social impact assessments; human rights; benefit-sharing arrangements; livelihood restoration; and project-induced displacement and resettlement (Ogwang & Vanclay, 2021).

Against this backdrop, this study seeks to interrogate R4I deals as a financing technique, why it failed in some countries, and how to improve its impact and effectiveness in bridging infrastructure gaps in SSA.

The rest of this paper is accordingly structured as follows. Section 2 presents an overview of existing literature on R4I as a creative financing technique. Section 3 explores the theoretical bases for the thesis of the paper. Section 4 discusses the research methodology used in the study. Section 5 presents the discussions on the research question by interrogating whether R4I deals guarantee remunerative returns by ensuring mutuality of benefits between host nations and foreign investors. Section 6 examines the Angolan and Nigerian experiences with signing R4I agreements with China to bring home the challenges besetting R4I deals and poignant lessons for other resource-rich nations in SSA. Furthermore, it explores why the R4I deals succeeded in Angola but failed in Nigeria. Section 7 makes a case for further study on under-researched aspects of R4I agreements as a creative financing mechanism. Section 8 concludes the paper.

2. LITERATURE REVIEW

Public infrastructure refers to a vast range of buildings, public services, utilities, and installations that are necessary for the efficient operation of an economy and society. Roads, bridges, railroads, airports, public transportation, telecommunications, sewage, medical and educational facilities, energy, and water supply, among others, are all included in this category. Developing nations must upgrade their critical public infrastructure and services to make progress and experience significant economic growth and development (Gil et al., 2019).

Infrastructure is essential to society's overall functioning and catalyses human and economic

development. It establishes a nation's commercial competitiveness and generates employment (Calderon et al., 2018), thus essential for improving quality of life (Chen, 2018). Infrastructure, therefore, underpins prosperous economies and societies. Additionally, infrastructure that works effectively is essential for developing human capital. Health infrastructure, for example, enhances population health, and educational infrastructure raises educational standards (Francisco & Tanaka, 2019). Scholars, policymakers, and politicians, therefore, have long considered a sufficient supply of infrastructure services necessary for economic growth (Ehizuelen, 2021).

Generally, people are negatively impacted by unreliable infrastructure systems or interruptions in two ways: indirectly through the reduced productivity of businesses and directly through households' impacted consumption and well-being. Infrastructure disruptions are estimated to cost businesses more than US$300 billion annually. The immediate effects are the most obvious: 1) a business that uses water to cool equipment must stop operations during a dry spell; 2) a restaurant with an electric burner cannot prepare food without power (Hallegatte et al., 2019). Disruptions result in idle manufacturing capacity, lower firm sales, and a delay in the production and delivery of goods. Also, businesses must pay to deal with unstable infrastructure, such as water storage or backup power generation. Disruptions' indirect effects take time to manifest. These include impacts on long-term investment and strategic choices made by businesses and on industries' structure, rivalry, and innovation. These factors contribute to an economy's capacity to create wealth and global competitiveness (Hallegatte et al., 2019).

In Africa, there is a huge funding gap for critical public infrastructure, which is between USD 130 billion and US$170 billion annually (AfDB, 2018a). It is a known fact that Africa faces severe infrastructure deficiencies that affect a wide range of industries, including transportation, housing, sanitation, water, and electricity, among many others (Asante & Helbrechta, 2019). As pointed out above, a large portion of Africa's public infrastructure shortfall appears in SSA, where an estimated US$93 billion in yearly finance is needed (Chigora et al., 2021).

Over 645 million people in SSA lack access to power due to infrastructure failure, and about one-third of rural residents live within two kilometres of paved roads (AfDB, 2018b). The shortfall is made worse by the regular interruptions of existing services. Deficits and disruptions in infrastructure harm businesses, particularly small-to-medium-sized businesses, and slow down efforts to create jobs and other forms of economic development (Hallegatte et al., 2019).

Countries in SSA, however, lack the resources to finance and sustain the demand for infrastructure that propels economic growth and development and improves the quality of life for its citizens (Chigora et al., 2021). The infrastructure gap, therefore, presents a significant obstacle to industrialisation because industries can only thrive in an environment with sound infrastructure (Kuete & Asongu, 2022).

As the AfDB (2018b) noted, a healthy economy requires effective and adequate infrastructure to drive the industrial sector, which is viewed as an engine of economic growth. The availability of adequate and effective public infrastructure does not only improve people's quality of life, but it also supports rapid industrialisation. As a result, infrastructure development in Africa is vital for supporting economic growth and raising Africans' living standards. It substantially contributes to human development, poverty reduction, and achieving Sustainable Development Goals (AfDB, 2018b).

Expectedly, one of the key issues holding up industrialisation in the region is the lack of sufficient supply of productive infrastructure in the areas of transportation, telecommunications, water, and electrical services. By reducing this shortfall alone, businesses would be able to thrive in markets where they have significant comparative advantages (AfDB, 2018a) and in addition, this will enable Africa to address its fundamental socio-political and economic issues and to significantly increase its contribution to global demand (Nkemgha et al., 2023).

Therefore, African nations' efforts to develop a competitive industrial sector and foster stronger industrial ties are hampered by inadequate infrastructure (energy, transport, communication, etc.), raising production and transaction costs. Therefore, it is essential to increase infrastructure spending, including on energy (Nkemgha et al., 2023).

Industrialisation is a powerful dynamic for growth and development in both the developed and developing worlds. The relationship between infrastructure and industrialisation in any economy can be appreciated from the perspective of resource distribution, which includes production inputs and outputs to and from industries. Hence, infrastructure and industrialisation go hand in hand in any economy's pursuit of sustainable development (Umofia et al., 2018).

Furthermore, understanding the value-added relationship between infrastructure and industrialisation is critical for reaching target 9 of SDGs, which demands the creation of strong infrastructure, promoting equitable and sustainable industries, and promoting innovation. In addition, infrastructure is critical to Agenda 2063 and the Continental Free Trade Area's compelling vision of opening the African continent and rebuilding its economy for the benefit of its people. The African Continental Free Trade Agreement (AfCFTA) intends to unite the continent's products and services markets while allowing unfettered business movement and investment (Nkemgha et al., 2023).

The availability of essential infrastructure services has long been considered a prerequisite for economic development. However, SSA routinely performs the lowest of any rising region in practically every category of infrastructure performance (The World Bank, 2005). The performance of the region's infrastructure in its key sectors exhibits a range of patterns, according to The World Bank (2005). The telecommunications sector's infrastructure in SSA has significantly improved, and the advantages are extensive (Azolibe & Okonkwo, 2020). For example, electricity costs in Africa are three times higher than in comparable developing regions, according to the AfDB (2018a). In addition, most businesses operating in West and East Africa must rely on expensive backup generators as their primary energy supply, which reduces their profit

margins. Nevertheless, insufficient transportation infrastructure makes it challenging for businesses to take advantage of regional economies of scale.

Compared to other emerging regions, the region has the fewest roads and railroads, which suggests that the region's transportation infrastructure is inadequate (Azolibe & Okonkwo, 2020). Besides, industries can only prosper in a nation with good infrastructure, so this gap is a significant barrier to industrialisation (Azolibe & Okonkwo, 2020).

Traditionally, public infrastructure in developing nations is funded by a national government using public sources or obtaining a loan from a private bank or an international financial institution (such as The World Bank or another multilateral development bank) and then hiring an engineering/ construction company to complete the project.

As Mihalyi et al. (2020) argued, developing countries must unavoidably overcome many challenges to finance their economic development and growth. One key challenge is that investors frequently regard developing countries as high-risk, limiting their capacity to access international financial markets. Given the natural resource boom that began at the turn of the millennium, a new financing mechanism that developed to invite foreign investment is the R4I mechanism. Countries acquire credit in exchange for (or as collateral) future income streams from their natural resources (Mihalyi et al., 2020). This has also been corroborated by Ogwang and Vanclay (2021) when they pointed out that a greater range of project financing and construction models are now available, some of which depend on a nation's mineral resources.

Based on the above review of some of the existing literature, although there are points of convergence between the reviewed literature and the thesis of this particular study, the point of departure is that this research focuses primarily on Angola and Nigeria as case studies. These two nations account for the bulk of Africa's crude oil production and exports, and each has previously signed R4I agreements with China. This is where the originality or novelty of this research lies. Besides, it is also the gap in the literature that this study seeks to fill.

3. THEORETICAL BASIS

The main objective of this sub-section is to explore the theories underpinning this paper's thesis.

Cottrell (2011) defines "theory" as "a set of ideas that helps to explain why something happens or happened in a particular way and to predict likely outcomes in the future". It is the basis on which suggested policy actions may be justified. Besides, it provides a lens for understanding the phenomenon under description in a study. It, therefore, provides an improved insight into the subject under interrogation. In addition, the theory is a "tentative explanation of phenomena" (Ary et al., 2010, p. 34).

The first theoretical perspective that underpins cross-border capital investments, including R4I deals, and their implications generally for economic growth is the pro-international investment theory. It posits that foreign investment promotes economic growth and benefits host countries, capital-exporting states, and foreign investors. This view has gained currency among multinational corporations (MNCs), counsels to foreign investors, and capital-exporting governments. Pro-investment attitudes have resulted in the enactment of national legal frameworks that allow foreign capital relative freedom of entry, place foreign investments on an equal pedestal legally with local enterprises, and avoid special restrictions on the activities of foreign investors (Salacuse, 2013). Pro-direct foreign investment attitudes are also found among international institutions like The World Bank. The Bank has always stressed the importance of improving the investment environment to achieve economic development and devotes much effort to helping states achieve this goal. National laws and state policies also play a significant role in creating such an environment. Pro-investment theories are entrenched in many legal institutions, including national laws of many states that emphasise the importance of foreign investment for economic growth and in many international treaties (Salacuse, 2013).

The pro-investment theory is, however like the classical theory on foreign investment. The classical theory posits that foreign direct investment (FDI) is wholly beneficial to host countries and that foreign capital brought into the host state ensures that domestic capital can be used for other public needs. Moreover, foreign investors may bring new technology, locals could acquire new skills, and new jobs are created (Sornarajah, 2017). However, this theory is losing popularity. For example, where an MNC exploits scarce resources or labour without regard for the environmental impact, benefits may not accrue to the host state (Sornarajah, 2017).

Therefore, the classical theory supports the view that R4I deals as a variant of foreign investment benefits host countries by ensuring the provision of infrastructure for economic growth and human development. However, the authors of this paper do not agree that R4I deals are wholly beneficial to host states. International mining, oil, and gas companies often have more information about resource deposits in SSA resource-rich countries than the host states. This has resulted in public concerns that R4I agreements may be skewed in favour of corporate developers (Danchie, 2016).

The third theoretical perspective is the theory that argues that FDI does not automatically bring benefits or losses to host states and is thus neither inherently good nor bad (Salacuse, 2013). The bargain negotiated between a host state and a foreign investor regarding the distribution of costs and profits determines whether FDI benefits a host state or not. This theory is based on two crucial insights. On the one hand, international investment is not merely a transfer of assets from one state to another but a deal between the investor and the host state. It also distributes the costs and benefits of the agreement between both sides (Salacuse, 2013). Thus, the ability of a resource-rich state to gain net positive gains from an R4I agreement depends on its capability to negotiate a good deal. The terms of the deal should be found in the regulatory framework, investment legislation, and contracts affecting that transaction.

Moreover, the aim of the national legal framework is to maximise the benefits of and minimise the costs of any investment project. To

achieve this aim, national legal frameworks should provide for careful screening and monitoring of all foreign investments and specify in detail the contributions such projects must make to the host state (Salacuse, 2013). For instance, national investment laws and regulations influenced by this theory stipulate the number and quality of work opportunities for citizens, limitations on the repatriation of capital and profits, and the level to which investors must transfer useful technology, skills and knowledge to the host state.

Conversely, negotiations between investors and a state continue after the investor has made its investment. The relationship between the two sides is a continuing negotiation because each side seeks better benefits from the investment, mainly at the expense of the other. This theory proves that whether R4I deals are beneficial to host states partly depends on how well they negotiate the agreements (Salacuse, 2013).

The fourth theoretical perspective worth mentioning in support of the thesis of this paper is the structural theory of international investment. The benefits of foreign investment to host states depend on the nature of the deal they strike with foreign investors. Unfortunately, developing countries may not have the power to negotiate good investment benefits with foreign investors, particularly MNCs, because of the power asymmetries. Many developing states suffer from a structural disadvantage in their dealings with international investors. In this context, SSA resource-rich countries suffer from a structural disadvantage in their dealings with the corporate developers in R4I deals. Countries can address this structural disadvantage in two ways: seeking ways to improve their negotiating capacity (e.g., improved training for officials involved in the negotiation process) and being extremely cautious in negotiating FDI deals (Salacuse, 2013).

The fifth theoretical basis for the argument presented in this paper is the theory of law and development. This social theory of law has the ideal of legal liberalism as its focal point (Soyeju, 2015). Here, the law is viewed as a method of social engineering and a tool to achieve development objectives. It also argues that laws and legal institutions can play a significant role in achieving social change. Essentially, this theory posits that the law has a natural development function (Soyeju, 2012). Thus, laws are required to ensure the institutional changes needed to implement more efficient development strategies (Soyeju, 2012). In relation to the thesis of this paper, a fair legal framework incorporates the varied interests of the parties — the government and the corporate developer — and seeks to achieve an equitable balance between these varied interests. Thus, the law can be used as a platform to facilitate development and infrastructure provision (Soyeju, 2012). When there is a robust legal framework, R4I contracts concluded between resource-rich countries in SSA and corporate developers may promote cooperative engagement for the mutual benefit of the parties concerned. Unequivocally, rules are fundamental in defining the terms and the templates upon which financial capital flows. Therefore, when a country has a legal framework that has comprehensive laws and regulations that have transparency and fairness and a very sound capacity for investment negotiations, the state has a better chance of leveraging R4I swaps as a financing option for the provision of critical infrastructure assets and promotion of national development priorities (Natural Resource Governance Institute [NRGI], 2015).

Lastly, there is the neo-classical economic theory. Another assumption underpinning R4I deals is that private sector involvement in procurement, management and maintenance of public assets will improve the public allocation of resources, efficient maintenance, and management of infrastructure assets for quality service delivery to the public. The neo-classical theory supports this assumption. The neo-classical economic theory's focal point is the efficiency of markets, free competition, and the primary role of individuals in determining optimal economic outcomes. Neoclassical economics, as the contemporary version of the liberal economic model, dominated development policy in the late twentieth century (Seidman & Seidman, 1994).

Regarding the public sector's procurement of infrastructure, the argument is that the public sector generally has a legacy of poor performance and has always functioned ineffectively and inefficiently. Besides, the public sector lacks the financial and technical wherewithal and capacity to handle the task involved in procuring public infrastructure and service delivery. This line of thought could be traced to the first formulations of neo-classical theory and the later rejection of the Keynesian notion of the appropriateness of relatively extensive state interventions (Seidman & Seidman, 1994).

According to the neoclassical model of perfect competition, market forces allocate scarce resources in a way that best fits demand. This is what is called 'Pareto optimality'. Market competition thus results in the most effective use of resources, and all participants achieve their best possible position (Seidman & Seidman, 1994). This theory justifies the assumption that there would be more innovation towards infrastructure investment because of competition between corporate developers and the forces of demand and supply when a market-based infrastructure-financing model like R4I swaps is used.

The conclusion is that these theories assist in understanding the complex issues involved in FDI, including the R4I model, which is gaining currency as a variant of infrastructure investment financing solutions in resource-rich and cash-poor SSA countries.

4. RESEARCH METHODOLOGY

This research is a theoretical, qualitative case study analysis. It interrogates whether the use of R4I agreements as a financing technique in oil-rich and cash-poor markets guarantees remunerative returns by ensuring mutuality of benefits between the host nation and the foreign corporate developers or investors. In this regard, the study is a theoretical, desktop and library-based or non-empirical research, also known as doctrinal research. As doctrinal research, it relies on the analyses of extant theoretical literature, published and unpublished, on R4I deals. Besides, case studies in this regard aim to generate rich insights from intensive and in-depth research into the R4I phenomenon in its real-life

context. Specifically, it is believed that all the challenges besetting R4I deals will be illustrated with graphic accounts of Nigerian and Angolan experiences. The possible reasons why they worked in Angola but not in Nigeria will be highlighted.

5. DISCUSSION

The kernel of this section is to interrogate whether R4I deals guarantee remunerative returns by ensuring the mutuality of benefits between host nations and foreign investors. Generally, states have the duty to ensure the provision of various infrastructure types to ensure the efficient functioning of society. To remain competitive on a global scale, however, governments alone cannot finance the huge investment needed in this critical sector.

Several financing techniques were traditionally used for financing infrastructure development. The R4I technique may have developed from a mix of these.

R4I is resource-backed financing which has emerged mainly in response to constraints associated with resource-rich countries' inability to obtain credit, as risk calculations play an essential role in determining the interest rates of development financing. Due to the lack of good credit history, certain countries' risk levels are elevated, making it almost impossible for their governments to obtain credit, even at almost any interest rate (Landry, 2018). Thus, as rightly opined by Brautigam and Hwang (2016), commodity-secured finance is much less about locking up natural resources and more about reducing the risks of lending to poor and unstable countries. The resource backing allows projects to be financed at a reasonable interest rate.

Resource-rich, cash-strapped nations, particularly those in SSA, frequently face the choice of delaying the construction of desired infrastructure until resource revenues accrue in the future, borrowing money now to build the infrastructure in the short term with the loans being repaid from and secured by future resource revenues, or entering into an R4I deal where a foreign company provides resources in exchange for infrastructure (Ogwang & Vanclay, 2021).

Two terminologies are frequently used in this regard: resource-financed infrastructure (RFI) and resources-for-infrastructure (R4I). The terms are similar and occasionally used interchangeably. However, they differ in that in R4I deals, the lender is promised the resources. In contrast, in RFI, the proceeds from the sale of the resources are used to repay the loan. The resources thus act as the necessary collateral (surety or backing) (Ogwang & Vanclay, 2021). RFI is a financing strategy whereby a government commits its future profits from a resource development project to repay a loan used to support the construction of infrastructure (Halland et al., 2014). In contrast, an R4I agreement or "swap" is an exchange of natural resources to build infrastructure, where the infrastructure is provided upfront, and the resources are delivered later (Lin & Wang, 2016). The focus here in this study is, however, on R4I deals.

As noted by Ogwang and Vanclay (2021), depending on the goals of the lender and the resource-rich country, the specific arrangements of R4I partnerships can vary and be complex. For the lending country, the goals can be getting access to limited resources, participating in a market entry strategy (or entering a new country), or establishing a foreign market for lending country companies. The goal for the resource-rich nation is often to build the needed infrastructure earlier than would otherwise be feasible.

R4I agreements are thus a mechanism through which a state can procure infrastructure without financing its development. The R4I as a financing technique involves an interrelated three-step process. First, the resource-rich state and the developer agree on a resource development and production license (Farlam, 2005). The resource developer would then seek to convert its exploration license to a development and production license, which, when issued, must have a firm development timeline and a fiscal regime that provides income flows to the state when the resource is being produced. Secondly, the income flows that the state will receive from the resource production project would be pledged to a lender as collateral for a credit facility. Thirdly, it is necessary to contract with entities that specialise in constructing specific types of infrastructure to build needed infrastructure (Farlam, 2005).

R4I deals hold many advantages; in other words, there are many good sides to their use as a financing mechanism. R4I agreements ensure infrastructure investments occur swiftly. This is because money for infrastructure projects does not go through the government. These partnerships can prevent other sorts of political spending from taking precedence over infrastructure investments, as well as mismanagement or embezzlement (Landry, 2018).

The opinions on R4I are, however, divergent. Although some commentators view R4I agreements favourably, others (especially local businesses) believe they lack transparency, lead to unmanageable debt, advance China's interests over the borrowing nation, increase unemployment, unfairly compete with local businesses, involve corruption, result in subpar delivery of projects, and lack transparency (Ogwang & Vanclay, 2021).

China's earliest experiences with resource-backed loans occurred at home. In the 1980s, Japan offered significant infrastructure loans to China, assisting it in developing its extractive sector, notably the Daqing Oil Field. Moreover, the Japanese Ministry of Foreign Trade and Industry openly advocated for Japan's first package of foreign aid loans to China to be utilised primarily to construct railroads and ports to enable the sale of Chinese oil and coal to Japan. These resource-backed loans aided China's infrastructural development while simultaneously helping Japanese businesses (Landry, 2018).

As a result of its economic success over the previous decades, China has risen to prominence as a provider of development money. Around that time, Chinese infrastructure projects in Africa proliferated. This is a significant result of China's "going global" programme, which has resulted in the internationalisation of its state-owned firms (SOEs). When China's domestic market became increasingly oversaturated, many of its construction businesses pursued overseas contracts, which were frequently financed by the country's policy banks (Landry, 2018).

The following paragraphs will discuss whether R4I deals promote collaborative engagement for mutuality of benefits between the host state and foreign developer/investor or whether it is just a poisoned chalice.

First, the nature of R4I agreements makes it a controversial tool for infrastructure financing, with resultant debate arguing for and against its uses and benefits (Halland et al., 2014). Part of this debate is that few SSA resource-rich countries know the extent of their resources, and they do not have a clear idea of the value of their resources (Danchie, 2016). However, international oil, gas and mining companies usually have better knowledge of the extent of the resources of their host SSA countries, in what quantities, the costs of extraction and the potential profits involved. This may be why there are concerns that R4I agreements are skewed in favour of foreign investors. Thus, it is important that a state knows the extent of its resources to better negotiate with foreign entities looking to conclude an R4I deal. Therefore, investing in more geological surveys is crucial to comprehend the nature and scope of the state's natural resources. According to Danchie (2016), doing this would give the state leverage when negotiating R4I deals. African countries have been found to depend on the information provided by investors to their detriment. This information asymmetry has the consequence that resource-rich SSA countries negotiate blindly and risk giving away resources at very low prices. It has been estimated that the information asymmetry has cost Africa as much as US$1.4 trillion over the past three decades, according to AfDB (Danchie, 2016). Thus, many resource-rich countries take a passive role in optimising the benefits from their extractive sectors due to their weak capacity in verifying information such as the extent of their resources, the value of the resources and the cost of extraction (Danchie, 2016). How much resources lie underground in or offshore Africa is unknown. Yet, Africa's natural wealth can lift millions out of poverty and set Africa on a path of prosperity for many years.

For example, one of the most prominent R4I deals that took place in Africa was the *Sicomines* agreement between the Government of the Democratic Republic of Congo (DRC) and a group of Chinese companies, which generated national and international criticisms. Some critics have voiced concerns that the agreement was skewed in favour of the Chinese investors, with estimates placing the value of the concessions between US$40 and US$120 billion, as opposed to US$9 billion as per the agreement (Landry, 2018).

In terms of the agreement, the Chinese government-owned Bank provided a concessional loan of US$3 billion for infrastructure investment separate from the mining project and US$3 billion for the copper-cobalt mine itself. The operations started in 2015, and the Congolese government was to repay the loan with the profits from the mining project. Curiously, no financial details were released about the *Sicomines* deal. The public only knew about the interest rates, grace and repayment periods, but prices of minerals in mining concessions were unknown. However, admittedly not always the case, in this instance, critics alleged that the traded oil and mining concessions were larger than the loan amount and that the natural resources were misused (Landry, 2018).

Secondly, some writers have argued that R4I deals by conventional principles are undesirable because it reduces future fiscal flexibility by allocating funds for infrastructure. It may be the best option available in countries with weak public administration, however. It is argued that allocating resource revenues for investment may be preferable, especially where there are high spending pressures, even though fiscal flexibility is not desirable. Other commentators argue that committing resource revenues to infrastructure may help prevent capital flight in countries with weak political and financial institutions (Halland et al., 2014). The R4I mechanism should therefore be evaluated like any other contract and compared to other means of financing infrastructure (Wells, 2013). Soyeju (2012), however, notes that the R4I mechanism should complement other innovative infrastructure financing sources, not just be an alternative.

Thirdly, a major concern associated with R4I deals is that they do not usually comply with Extractive Industries Transparency Initiative (EITI) requirements. The parties do not disclose the particulars of the actual negotiated terms of the contracts and the shadow relative prices used to calculate long-term barter agreements couched in these contracts (Nissanke & Söderberg, 2011). In addition, a potential conflict of interest may exist where the seller and buyer of the minerals are the same firm, or both firms are controlled by the same state (Konijn & van Tulder, 2015). Critics have also alleged that the R4I swaps are riddled with corruption (Konijn & van Tulder, 2015). Even though this is true in some cases, as in Nigeria (Vines et al., 2009), these accusations have not all been backed with hard evidence (Konijn & van Tulder, 2015). As rightly pointed out by Wells (2013), there is scant evidence to prove that R4I deals involve more corruption than other extraction agreements in host economies.

Fourthly, studies have shown that Chinese construction companies, for example, have weak linkages with local economies (Corkin, 2012). In other words, Chinese firms mainly import their workforce, materials, and equipment. Less than five per cent of all materials are estimated to be sourced locally (Konijn & van Tulder, 2015). If these linkages are not made, the infamous 'resource curse' phenomenon comes into play. Furthermore, concerns suggest that China imprudently lends to African nations with little commitment to "good governance". According to traditional donors who raised these concerns, this may increase the risk of future debt crises along with the deterioration of debt sustainability (Danchie, 2016).

On the flip side, however, certain risk factors may be particularly apparent in R4I agreements because of their specific structure and should be considered. First, because R4I agreements bind host governments to choose firms or consortiums and frequently do not include competitive bidding procedures, projects delivered as part of RFI agreements can be more expensive than their traditional equivalents. Second, R4FI transactions can be prone to quality issues. Firms seeking possibilities in the extractive or infrastructure

sectors typically collaborate with financiers and submit unsolicited bids to host governments as part of R4I initiatives. As a result, to obtain the funds, the host government must likewise bind itself to the linked enterprises. Furthermore, because the contractors handle the loans directly, the role of host governments in project execution is weakened, potentially leading to scenarios in which effective oversight does not occur (Landry, 2018).

Furthermore, R4I agreements can become politicised due to their economic importance, undermining host governments' incentives to effectively control the quality of delivered infrastructure projects. R4I contracts are also frequently less transparent than other types of infrastructure contracts. They have an omnibus character, with several financial and commercial arrangements intertwined. Because of their size, they are more challenging to understand and less transparent than their counterparts. In addition, because of their structure and long time horizon, RFI agreements pose significant financial risks. As a result, their underlying exchange may eventually favour one side over the other (Landry, 2018).

Many other issues have also been expressed about the relative lack of openness and insufficient supervision systems in R4I deals, which are vital to ensuring the quality of its infrastructure component. First, some of R4I's flaws would be solved if more competition existed on the supply side of such transactions. R4I agreements are fundamentally like other infrastructure funding instruments. The main distinction is that R4I loans must be returned after a period of resource extraction. It is in this context that R4I deals must be made more transparent. The opacity can lead to many problems, including infrastructure projects of suboptimal quality, as well as poorer resource exploitation practices among debtor countries. Furthermore, R4I-financed infrastructure projects must be subjected to the same third-party quality controls as traditionally financed counterparts (Landry, 2018).

Second, while evaluating R4I initiatives, risk estimations must be meticulous and modest. While risk exists in any infrastructure funding or resource extraction project, it is especially evident in R4I agreements. Because R4I infrastructure loans are disbursed upfront and reimbursed decades later, any major risk exposure might endanger projects by dramatically lowering their net present value (Landry, 2018).

Third, another fear expressed by experts is that the deal's structure will saddle the recipient oil-rich but cash-strapped country with unsustainable debt (Ogwang & Vanclay, 2021). A good example is the *Sicomines* deal between DRC and China. It was feared that taking on such a hefty loan would render the DRC's debt situation untenable. As a result of raising this concern, an amendment to the agreement was established, limiting the size of infrastructure loans to US$3 billion. It also removed the government of Congo's guarantee for the mining loan (but not for the infrastructure loan) (Mihalyi et al., 2020).

However, it is instructive to note that some of the flaws of R4I negotiations can be attributed to the exclusivity on the supply side of these transactions. Since many resource-rich countries struggle to get traditional infrastructure finance, R4I transactions represent an intriguing alternative that can ensure the implementation of public works in a reasonably short timescale.

With the non-legal areas of concern discussed, some other legal challenges blight the usefulness of R4I deals, as delineated in the paragraphs below.

Compared with other parts of the world, governance indicators are weak in SSA. Substantial risks, therefore, arise from poor administration, inadequate protection of property, and contract rights, poor transparency, and mainly regulatory and policy uncertainty. There have been calls for clear policies that would inspire confidence in foreign investors and lower investment risks (Barber, 2014). Thus, policy certainty and specific policies that address R4I agreements are needed to create a friendly policy environment.

For example, policies need to be sustainable to survive a change of government. Infrastructure projects naturally require extensive investment and a longer period for development, construction, start-up, and operation (State Bank of Pakistan, 2016). Typical infrastructure investment agreements take about two decades to be completed. As investors spend much money and time on investment projects as big as R4I agreements, there is, therefore, a need for an assurance that their investments will be protected in the event of a change of government. Again, the example of Nigeria (discussed below) is very instructive here. In addition, policy significantly impacts legislation (Thyse, 2016).

The issue of weak legal environments must also be addressed. Policy considerations must be backed up by law to be adequately enforced. So, legislation usually plays a big role in promoting investment in infrastructure projects. The legislation should represent a guarantee of the stability of the state's legal system. It is, therefore, important for rules to be established which define the terms and templates through which capital flows into a country. Therefore, a sound legal framework is needed for R4I agreements to be creatively used to bridge infrastructure gaps in SSA. It is also essential to ensure that the law is flexible enough to keep pace with developments in the infrastructure industry. A good legislative framework must be transparent, fair, and capable of sustaining infrastructure provision in the long term (United Nations Commission on International Trade Law [UNCITRAL], 2001). In addition, feeble regulatory landscapes blight R4I deals. A conducive regulatory landscape creates a level-playing field for all parties concluding R4I agreements (NRGI, 2015).

Lastly, impartial judicial systems are the elephant in the room. It has been argued and accepted that economic growth cannot last if good, impartial judicial systems do not support it. It is very crucial for the legal system to provide a way of resolving disputes between two private parties and between a private party and the state. Courts are a way of resolving disputes justly. The fairness of judicial decisions is known first by the independence of judges — perceived and real. There must be enough safeguards to ensure that both judicial decisions are independent of the influence of powerful state officials and private parties and political decisions. An independent judiciary supports economic growth and legal

reform by consistently and efficiently enforcing clear rules (The World Bank, 2005). This also applies to infrastructure investments such as R4I deals. International arbitration is an option for resolving disputes. Nonetheless, as it tends to be expensive, having a reputable judicial system makes a country a desirable investment destination.

In the next section, some of the challenges besetting R4I deals will be illustrated with graphic accounts of Nigerian and Angolan experiences. The possible reasons why they worked in Angola but not in Nigeria will be highlighted.

6. THE ANGOLAN AND NIGERIAN EXPERIENCES: WHY THE R4I DEALS SUCCEEDED IN ANGOLA BUT FAILED IN NIGERIA?

As indicated above, the choice of Angola and Nigeria was informed by the fact that they account for the bulk of Africa's crude oil production and exports, and besides, each of them has signed R4I agreements with China in times past. In addition, the two countries extractive sectors have a tremendous opportunity for expansion over the next decade and will undoubtedly continue to be significant investment sectors.

In Nigeria, former Head of State, President Olusegun Obasanjo, had created a scheme to entice Asian National Oil Companies (ANOCs) from Taiwan, India, South Korea, and China to acquire oil blocks for the first time in Nigeria. The scheme, however, was awkward. In return for their commitment to invest in downstream and infrastructure projects, the ANOCs were given the Right of First Refusal (RFR) and discounted signature bonuses on several oil blocks. R4I deals were relatively new, but their introduction compromised the transparency of the oil licensing rounds of 2005, 2006 and 2007 (Vines et al., 2009).

The first loan China's Export-Import Bank (Exim Bank) gave Nigeria was to finance the construction of power stations at Geregu (138 MW), Omotosho (335 MW) and Papalanto (335 MW) in Kogi, Ondo, and Ogun states, respectively in 2005. Shandong Electric Power Construction Corporation (SEPCO), a Chinese company, constructed the Papalanto plant, and China's Exim Bank arranged to provide US$300 million out of the US$400 million construction cost. The transaction was resource-backed such that PetroChina, a firm, got the deal to buy 30,000 barrels of crude oil daily from the Nigerian National Petroleum Corporation (NNPC) for one year, but renewable (Soyeju, 2012).

In 2006, China's Ex-Im Bank agreed to finance almost US$5 billion worth of projects. In this financing contract, it made contributions of US$2.5 billion to a critical Lagos-Kano railway upgrading project and US$1 billion to the Abuja Rail Mass Transit project, which involved constructing a high-speed rail link between Lagos and Abuja. Moreover, the Bank agreed to finance a light railway system connecting Murtala Mohammed International Airport and Nnamdi Azikiwe International Airport with the Lagos and Abuja city centres, respectively and a contribution of US$1 billion to the 2,600 MW Mambilla Hydropower projects (Soyeju, 2012).

President Obasanjo left office in May 2007 after spending his two-term limit in office. President Umaru Yar'Adua succeeded him and spent the first 18 months taking stock. Several decisions of the Obasanjo administration were cancelled, either because they involved much corruption, projects were not executed, or they were deemed not to be in the national interest. Two main projects linked to these R4I deals were cancelled in May and June 2008 (Soyeju, 2012).

An ad-hoc committee of Nigeria's House of Representatives had recommended in 2008 that all oil blocks awarded to ANOCs should be revoked. It reasoned that introducing the RFR one week before the 2005 bidding round compromised the auction's transparency and fairness. Later investigations concluded that the way the blocks were awarded in 2005, 2006, and 2007 had been irregular. President Yar'Adua, therefore, abandoned the RFR principle (Soyeju, 2012).

In 2009, South Korea's NOC (KNOC) sued India's Oil and Natural Gas Corporation (ONGC), and the Nigerian government. This was because an influential political figure in Nigeria's ruling party — the People's Democratic Party (PDP) — moved to give two oil blocks that KNOC had been awarded under the Obasanjo government by exercising its RFR in terms of an R4I deal to ONGC. The ONGC and the Nigerian government were co-defendants. The court ordered the government to postpone its decision until a full hearing was held. In the interim, Nigeria's Attorney-General instructed the Department of Petroleum Resources (DPR), which handles bidding rounds, to refund the money paid on the two blocks. Later, a Nigerian federal court decided that the government had illegally revoked the offshore oil exploration rights from KNOC (Vines et al., 2009).

The following question will be answered in the following sub-section: why did R4I deals work in Angola but fail in Nigeria?

In 2004, the first African R4I deal was concluded in Angola. Like resource-backed loans, R4I deals were first used extensively in Africa by the Angolan government. China's Exim Bank provided a US$2 billion loan to finance the reconstruction of infrastructure destroyed during Angola's civil war. The export revenue from 10,000 barrels of oil daily over 17 years was intended for loan repayment. Moreover, the loan agreement specified that 70% of public tenders for the infrastructure projects arising from the R4I deal were to be awarded to Chinese developers (Konijn & van Tulder, 2015).

This agreement allowed Angola to diversify its economy, which was over-reliant on oil; created jobs for low-skilled Angolans; extended at least 30% of the credit line to Angolan subcontractors; and helped repair some of Angola's ailing infrastructure (Zongwe, 2010; Brautigam, 2009).

The political context in which the R4I agreements were concluded in Nigeria and Angola is important. In Nigeria, the cash-hungry political elite sought to profit from its Asian partners' desire for oil. In Angola, however, the government treated its relationship with China with care, partly because it was motivated by the necessity to access funds to finance its recovery after its war. Nigeria, on the other hand, lacked motivation. The Yar'Adua Administration did not do enough to see the R4I scheme succeed (Vines et al, 2009).

Essentially, what led to the failure of the R4I agreements in Nigeria may have been the failure of the Obasanjo administration to manage the scheme

properly. No follow-up mechanisms were implemented to enforce the agreements. Angola, on the other hand, could manage its relationship with its Asian partners despite challenges that arose along the way (Vines et al, 2009).

Additionally, the ANOCs that concluded R4I agreements under Obasanjo's Administration did not comprehend the political context of that time. The Nigerian National Petroleum Corporation (NNPC) in Nigeria is dysfunctional and has been used by successive Nigerian leaders for personal gain. Moreover, the regular changes between military and civilian governments in Nigeria may have led to uncertainty and confusion regarding its policies. On the other hand, it was easier for China to relate with Angola because it has a stable and long-established government along with a functional oil company, Songola. Angola has had the same ruling political party since its independence and the same head of state for thirty years, thus, better policy consistency (Vines et al, 2009; Busari & Princewill, 2022).

Finally, there is a big difference between the investment scene in Nigeria and Angola. In Nigeria, there was much instability from militant action against oil installations in the Niger Delta (Nigeria's oil-producing region), which significantly disrupted production (Vines et al, 2009). This was not the case in Angola.

7. NEED FOR FUTURE INVESTIGATION

Recent research on policy considerations and legal imperatives surrounding R4I as a financing technique or mechanism is scanty. There is, therefore, an urgent need for further research into these areas. Policy and legal issues blight the usefulness of R4I deals. For example, governance indicators are weak compared to other parts of the globe in SSA. Hence, there have been calls for clear policies that would inspire confidence in foreign investors and lower investment risks. Thus, the potential usefulness of R4I deals is assailed by a poor enabling environment characterised by poor policy and a poor legal and regulatory landscape. A friendly policy environment and an effective legal and regulatory landscape are therefore crucial for R4I deals to thrive and be creatively used to bridge infrastructure gaps in SSA.

8. CONCLUSION

This study has sought to answer whether the R4I deals guarantee remunerative returns by ensuring mutual benefits between the host nation and the foreign developers or investors. Given the budgetary constraints accentuated by the scarcity of infrastructure funding sources, innovative ways of financing public infrastructure have become imperative. As argued in this study, to some extent, the resource-rich countries, especially the ones in SSA, are not getting fair R4I deals because of sundry reasons, including the lack of the capacity to negotiate complex and innovative contractual agreements with corporate developers like typical R4I deal. In addition, there is a lack of transparency regarding the cost of resources and executed infrastructure projects and the fact that these swaps have weak linkages to the economies of resource-rich host nations. Poor policy, legal, and regulatory environments also tend to blight the potential of R4I as a creative public infrastructure financing mechanism in SSA. Thus, the authors conclude that all these undermine the potential benefits of R4I agreements and argue that better training and capacity building, ensuring transparency, and improving the policy, legal and regulatory environment, among others, may improve the weak linkages that R4I deals have with the economies of resource-rich host nations.

The conclusion, however, is that R4I is a curate's egg, as many SSA nations have benefited from Chinese-funded infrastructure. The authors also believe that if these challenges are addressed, R4I swaps could be leveraged to bridge the infrastructure gap in the region. Hence, with these suggested reforms, the ability of SSA countries to creatively use R4I deals to achieve development objectives will be greatly enhanced.

Finally, the authors agree wholeheartedly with Ogwang and Vanclay (2021) that governments and developers should, nevertheless, make sure that international standards are upheld to ensure successful development outcomes, particularly concerning issues like environmental and social impact assessments, human rights, benefit-sharing arrangements, livelihood restoration, and project-induced displacement and resettlement.

REFERENCES

1. African Development Bank (AfDB). (2018a). *African economic outlook*. https://tinyurl.com/bddmz5r3
2. African Development Bank (AfDB). (2018b). *The Africa infrastructure development index 2018*. AfDB Statistics Department. https://tinyurl.com/429jm8bu
3. Ary, D., Cheser, L., & Sorensen, J. C. (2010). *Introduction to research in education* (8th ed.). Cengage Learning.
4. Asante, L. A., & Helbrecht, I. (2019). The urban dimension of Chinese infrastructure finance in Africa: A case of the Kotokuraba Market Project, Cape Coast, Ghana. *Journal of Urban Affairs, 42*(8), 1278–1298. https://doi.org/10.1080/07352166.2019.1629819
5. Azolibe, C. B., & Okonkwo, J. J. (2020). Infrastructure development and industrial sector productivity in sub-Saharan Africa. *Journal of Economics and Development, 22*(1), 91–109. https://doi.org/10.1108/JED-11-2019-0062
6. Barber, D. A. (2014, October 27). *Bad policies hinder Africa's renewable energy growth*. Sun-Connect News. https://sun-connect.org/bad-policies-hinder-africas-renewable-energy-growth/
7. Brautigam, D. (2009). *The Dragon's Gift: The real story of China in Africa*. Oxford University Press.
8. Brautigam, D., & Hwang, J. (2016). *Eastern promises: New data on Chinese loans in Africa, 2000–2014* (Working Paper No. 2016/4). https://tinyurl.com/y9dcjm82
9. Busari, S., & Princewill, N. (2022, August 29). *Angola's ruling party extends 47-year streak with election win*. CNN. https://edition.cnn.com/2022/08/29/africa/angola-ruling-party-wins-election-intl/index.html
10. Calderon, C., Cantu, C., & Chuhan-Pole, P. (2018). *Infrastructure development in Sub-Saharan Africa: A scorecard* (Policy Research Working Paper No. 8425). http://hdl.handle.net/10986/29770
11. Chen, C. (2018). Public infrastructure finance: Symposium introduction. *Journal of Public Budgeting, Accounting and Financial Management, 30*(2), 126–134. https://doi.org/10.1108/JPBAFM-06-2018-028

12. Chigora, F., Kapesa, T., & Svongoro, P. (2021). Revisiting nation branding: An infrastructure financing perspective in Zimbabwe. *International Journal of Financial, Accounting and Management, 3*(2), 179–192. https://doi.org/10.35912/ijfam.v3i2.611
13. Corkin, L. (2012). Chinese construction companies in Angola: A local linkages perspective. *Resources Policy, 37*(4), 475–483. https://doi.org/10.1016/j.resourpol.2012.06.002
14. Cottrell, S. (2011). *Critical thinking skills: Developing effective analysis and argument (Palgrave study skills)*. Palgrave Macmillan.
15. Danchie, S. (2016). Taking resource ownership. *African Business, 428*, 48–49.
16. Ehizuelen, M. M. (2021). China's infrastructure financing and the role of infrastructure in awakening African economies. *Journal of Comparative Asian Development, 18*(2), 1–25. https://doi.org/10.4018/JCAD.20210701.oa2
17. Extractive Industries Transparency Initiative (EITI). (2023). *EITI Standard 2023*. https://eiti.org/collections/eiti-standard
18. Farlam, P. (2005). *Working together: Assessing public–private partnerships in Africa*. Nepad Policy Focus Series, South African Institute of International Affairs. https://www.oecd.org/investment/investmentfordevelopment/34867724.pdf
19. Francisco, K. A., & Tanaka, M. (2019). Does public infrastructure affect human capital? The effect of improved transport connectivity on children's education in the Philippines. *Economics of Education Review, 73*, Article 101927. https://doi.org/10.1016/j.econedurev.2019.101927
20. Gil, N., Stafford, A., & Musonda, I. (2019) *Duality by design: The global race to build Africa's infrastructure*. Cambridge University Press. https://doi.org/10.1017/9781108562492
21. Halland, H., Beardsworth, J., Land, B., & Schmidt, J. (2014). *Resource financed infrastructure: A discussion on a new form of infrastructure financing*. The World Bank. https://doi.org/10.1596/978-1-4648-0239-3
22. Hallegatte, S., Rentschler, J., & Rozenberg, J. (2019). *Lifelines: The resilient infrastructure opportunity*. The World Bank. https://doi.org/10.1596/978-1-4648-1430-3
23. Konijn, P., & van Tulder, R. (2015). Resources-for-infrastructure swaps: A new model for successful internationalisation strategies of rising power firms? *Critical Perspectives on International Business, 11*(3–4), 259–284. https://doi.org/10.1108/cpoib-02-2013-0008
24. Landry, D. G. (2018). The risks and rewards of resource-for-infrastructure deals: Lessons from the Congo's Sicomines agreement. *Resources Policy, 58*, 165–174. https://doi.org/10.1016/j.resourpol.2018.04.014
25. Lin, J, Y., & Wang, Y. (2016). New structural economics and resource financed infrastructure. *Pacific Economic Review, 21*(1), 102–117. https://doi.org/10.1111/1468-0106.12154
26. Malah Kuete, Y. F., & Asongu, S. A. (2022). Infrastructure development as a prerequisite for structural change in Africa. *Journal of Knowledge Economy*, *14*(2), 1386–1412. https://doi.org/10.1007/s13132-022-00989-w
27. Mihalyi, D., Adam, A., & Hwang, J. (2020). *Resource-backed loans: Pitfalls and potential*. National Resource Governance Institute (NRGI). https://resourcegovernance.org/analysis-tools/publications/resource-backed-loans-pitfalls-potential
28. Natural Resource Governance Institute (NRGI). (2015). *Legal framework: Navigating the web of laws and contracts governing extractive industries*. https://resourcegovernance.org/sites/default/files/nrgi_Legal-Framework.pdf
29. Nchofoung, T. N., Asongu, S. A., Njamen Kengdo, A. A., & Achuo, E. D. (2022). Linear and non-linear effects of infrastructures on inclusive human development in Africa. *African Development Review, 34*(1), 81–96. https://doi.org/10.1111/1467-8268.12619
30. Nissanke, M., & Söderberg, M. (2011). *The changing landscape in aid relationships in Africa: Can China's engagement make a difference to African development?* (UI papers). https://eprints.soas.ac.uk/13323/1/Nissanke-Soderberg-_UI_paper.pdf
31. Nkemgha, G. Z., Nchofoung, T. N., & Sundjo, F. (2023). Financial development and human capital thresholds for the infrastructure development-industrialisation nexus in Africa. *Cities, 132*, Article 104108. https://doi.org/10.1016/j.cities.2022.104108
32. Ogwang, T., & Vanclay, F. (2021). Resource-financed infrastructure: Thoughts on four Chinese-financed projects in Uganda. *Sustainability, 13*(6), Article 3259. https://doi.org/10.3390/su13063259
33. Owusu-Manu, D., Jehuri, A. B., Edwards, D. J., Boateng, F., & Asumadu, G. (2019). The impact of infrastructure development on economic growth in sub-Saharan Africa with special focus on Ghana. *Journal of Financial Management of Property and Construction, 24*(3), 253–273. https://doi.org/10.1108/JFMPC-09-2018-0050
34. Prinsloo, C. (2019, June 25). *The pitfalls of private sector investment in infrastructure financing* (SAIIA Policy Briefing No. 187). SAIIA. https://saiia.org.za/research/the-pitfalls-of-private-sector-investment-in-infrastructure-financing/
35. Salacuse, J. W (2013). *The three laws of international investment: National, contractual, and international frameworks for foreign capital* (1st ed.). Oxford University Press.
36. Seidman, A., & Seidman, R. B. (1994). *State and law in the development process: Problem-solving and institutional change in the third world*. Palgrave Macmillan London. https://doi.org/10.1007/978-1-349-23615-2
37. Sornarajah, M. (2017). *The international law on foreign investment* (4th ed.). Cambridge University Press.
38. Soyeju, O. (2015). Making a case for a development-driven approach to law as a linchpin for the post-2025 development agenda. *Potchefstroom Electronic Law Journal, 18*(2), 372–382. http://dx.doi.org/10.4314/PELJ.V18I2.10
39. Soyeju, O. O. (2012). *Public assets financing in Nigeria: The imperatives for legal reforms to unlock domestic financial resources and foreign capital for infrastructure development* [LLD Thesis, University of Pretoria]. UPSpace Institutional Repository. http://hdl.handle.net/2263/24525
40. State Bank of Pakistan. (2016). *Guidelines for infrastructure project financing (IPF)*. https://www.sbp.org.pk/publications/gipf.pdf
41. The World Bank. (2005). *Financial sector assessment: A handbook*. The World Bank Publications.
42. Thyse, J. D. (2016). *Rights to and regulation of extractive industries* [Lecture, University of Pretoria]. University of Pretoria.
43. Umofia, N., Orji, K. E., & Worika, I. L. (2018). Infrastructural development and the Nigerian industrial sector performance. *International Journal of Scientific Engineering and Research, 9*(6), 331–335. https://tinyurl.com/5xsxzam2

44. United Nations Commission on International Trade Law (UNCITRAL). (2001). *Legislative guide on privately financed infrastructure projects.* https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/pfip-e.pdf
45. Vines, A., Wong, L., Weimer, M., & Campos, I. (2009). *Thirst for African oil: Asian national oil companies in Nigeria and Angola.* A Chatham House Report. https://www.chathamhouse.org/sites/default/files/r0809_africanoil.pdf
46. Wells, L. T. (2013). *Infrastructure for ore: Benefits and costs of a not-so-original idea* (Columbia FDI Perspectives No. 96). Columbia University, Vale Columbia Center on Sustainable International Investment (VCC), https://www.econstor.eu/bitstream/10419/253930/1/fdi-perspectives-no096.pdf
47. Wells, L. T. (2013). *Infrastructure for ore: Benefits and costs of a not-so-original idea* (Research Report No. 69). https://www.econstor.eu/bitstream/10419/253930/1/fdi-perspectives-no096.pdf
48. Xu, J., Ru, X., & Song, P. (2021). Can a new infrastructure financing model mitigate credit rationing in poorly governed countries? *Economic Modelling, 95*, 111–120. https://doi.org/10.1016/j.econmod.2020.12.001
49. Zongwe, D. P. (2010). *On the road to post conflict reconstruction by contract: The Angola model.* https://doi.org/10.2139/ssrn.1730442